

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference pct-889	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/KR 00/00657	International filing date (day/month/year) 22 June 2000 (22.06.2000)	(Earliest) Priority Date (day/month/year)
Applicant POHANG IRON & STEEL CO., LTD. et al.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (See Box II).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:
Preparation of aqueous urethane resin composition

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure.No.: 1

☒ as suggested by the applicant.

☐ None of the figures.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AT 00/00657

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: C08G 18/66, 18/10, 18/34, B05D 7/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: C08G 18/00, B05D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, PAJ, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 03 294325 A (MITSUI TOATSU CHEM. INC.) 25 December 1991 (25.12.91) (abstract) World Patent Index [online] London, U.K.: Derwent Publications Ltd. [retrieved on 2001-03-09]. Retrieved from EPO WPI Database. DW199207, Accession No. 1992-052050.	1-5,7,9-11
A	US 4301053 A (WOLFREY A.A.) 17 November 1981 (17.11.81) claims 1,7.	1-5,7,12
A	EP 0884336 A1 (BASF AKTIENGESSELLSCHAFT) 16 December 1998 (16.12.98) claims, page 3, lines 47-58, page 6, lines 3-6.	1-5,7-9,11,12
A	US 5569707 A (BLUM H. et al.) 29 October 1996 (29.10.96) claims 1, 11, column 6, lines 1-14, example 1.	1-5,7-9,11,12

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

3 March 2001 (09.03.2001)

Date of mailing of the international search report

30 March 2001 (30.03.2001)

Name and mailing address of the ISA/AT

Austrian Patent Office

Kohlmarkt 8-10; A-1014 Vienna

Facsimile No. 1/53424/535

Authorized officer

WEIGERSTORFER

Telephone No. 1/53424/221

INTERNATIONAL SEARCH REPORT

International application No.

PCT/RR 00/00657

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 11 138096 A (NIPPON STEEL CORP.) 25 May 1999 (25.05.99) (abstract). [Online retrieved on 2001-03-09]. Retrieved from EPO PAJ Database.	1,2,6,12

REMARK:

Claim 13 has been renumbered to claim 12, because only 12 claims have been transmitted.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 00/00657

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
EP	A1	884336	16-12-1998	AU	A1	71845/98	17-12-1998
				DE	A1	19725297	17-12-1998
				JP	A2	11012458	19-01-1999
JP	A2	3294325	25-12-1991	JP	B2	2988958	13-12-1999
JP	A2	11138096	25-05-1999			none	
US	A	4301053	17-11-1981	CA	A1	1161179	24-01-1984
US	A	5569707	29-10-1996	AT	E	174355	15-12-1998
				CA	AA	2143026	26-08-1995
				DE	A1	4406159	31-08-1995
				DE	C0	59504453	21-01-1999
				EP	A1	669352	30-08-1995
				EP	B1	669352	09-12-1998
				ES	T3	2124444	01-02-1999
				JP	A2	7247333	26-09-1995

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 December 2001 (27.12.2001)

PCT

(10) International Publication Number
WO 01/98392 A1

(51) International Patent Classification⁷: **C08G 18/66**,
18/10, 18/34, B05D 7/14

(21) International Application Number: PCT/KR00/00657

(22) International Filing Date: 22 June 2000 (22.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **POHANG IRON & STEEL CO., LTD.** [KR/KR]; 1 Koedong-dong, Nam-ku, Pohang-si, Kyung-sangbook-do 790-300 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JUNG, Yong-Gyun** [KR/KR]; Pohang Iron & Steel Co., Ltd., 1 Koedong-dong,

Nam-ku, Pohang-si, Kyung-sangbook-do 790-300 (KR). **PARK, Chan-Sup** [KR/KR]; Pohang Iron & Steel Co., Ltd., 1 Koedong-dong, Nam-ku, Pohang-si, Kyung-sangbook-do 790-300 (KR). **BYEN, Chang-Sae** [KR/KR]; Pohang Iron & Steel Co., Ltd., 1 Koedong-dong, Nam-ku, Pohang-si, Kyung-sangbook-do 790-300 (KR).

(74) Agent: **SON, Won**; C & S Patent and Law Office, C-2306 Daelim Acrotel, 467-6, Dogok-dong, Gangnam-ku, Seoul 135-270 (KR).

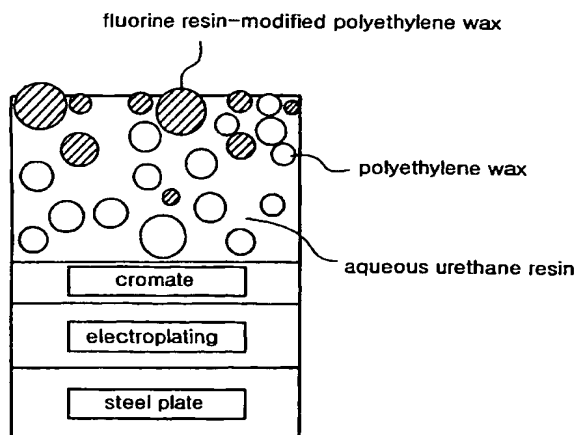
(81) Designated States (national): CN, JP, US.

Published:

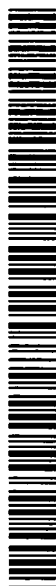
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PREPARATION OF AQUEOUS URETHANE RESIN COMPOSITION



(57) Abstract: Disclosed are a method for preparing an aqueous urethane resin composition, a method for preparing an aqueous lubricant urethane resin composition, and a surface treatment method of steel plates. The aqueous urethane resin composition is prepared by reacting polyester polyol, diisocyanate, dimethyl propionic acid or dimethyl butyric acid, and amine to give a prepolymer, dispersing the prepolymer in water, introducing into the water-dispersed prepolymer a chain extender, and adding the aqueous polyurethane resin solution with a curing agent. The dimethyl propionic acid or dimethyl butyric acid serves as a hydrophilic moiety for water dispersion. The aqueous lubricant urethane resin composition is prepared from the aqueous urethane resin composition in combination with a wax mixture of fluorine resin-modified polyethylene wax and polyethylene wax, colloidal silica and a coupling agent. This lubricant resin composition is coated at a thickness of 0.5-5.0 (μm) on a chromated, electroplated steel plate which is then baked at 110-200 (°C) and quenched in water. In addition to being superior in thin coatability, corrosion resistance, film flexibility, plate-adhesion property, surface friction, chemical resistance, and overcoatability, the lubricant resin composition shows excellent compatibility with various usually used additives.



WO 01/98392 A1